

District I
1625 N French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax. (575) 393-0720
District II
811 S First St., Artesia, NM 88210
Phone (575) 748-1283 Fax (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone (505) 334-6178 Fax (505) 334-6170
District IV
1220 S St Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax (505) 476-3462

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-101
Revised August 1, 2011

Permit

HOBBS OCD
MAY 23 2012

RECEIVED

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

Operator Name and Address XTO ENERGY, INC. 200 N. LORAIN, SUITE 800, MIDLAND TX. 79701		OGRID Number 005380
Property Code 39241		API Number 30-025-40590
Property Name MIS AMIGOS		Well No. 1H

Surface Location

UL - Lot O	Section 31	Township 23S	Range 33E	Lot Idn	Feet from 330	N/S Line S	Feet From 1980	E/W Line E	County LEA
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Pool Information

TRIPLE X BONE SPRING, WEST	96674
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Additional Well Information

Work Type N	Well Type O	Cable/Rotary R	Lease Type S	Ground Level Elevation 3654'
Multiple No	Proposed Depth TVD: 11,090'	Formation Bone Spring	Contractor PIONEER #33	Spud Date
Depth to Ground water 450'		Distance from nearest fresh water well		Distance to nearest surface water 5 miles

Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
	17 1/2"	13 3/8"	48#	1250	1115	Surface
	12 1/4"	9 5/8"	40#	5050	1635	Surface
	8 3/4"	7"	26#	11500	1475	4500'
Liner	6 1/8"	4 1/2"	11.6#	15384		

Casing/Cement Program: Additional Comments

See attached Drilling Plan, H2S Plan, Horizontal Plan & BOP	Permit Expires 2 Years From Approval Date Unless Drilling Underway
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Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
13 5/8" Double Ram 2FZ35-35	5,000#	5,000#	CAMERON

I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

I further certify that the drilling pit will be constructed according to NMOCD guidelines ☐, a general permit ☐, or an (attached) alternative OCD-approved plan ☐. Closed Loop.

Printed name: Barry W. Hunt

Title: Permit Agent

E-mail Address: specialtpermitting@gmail.com

Date: 05/21/12

Phone (575) 361-4078

OIL CONSERVATION DIVISION

Approved By:

Title: PETROLEUM ENGINEER

Approved Date: MAY 25 2012

Expiration Date:

Conditions of Approval Attached

MAY 29 2012

XTO ENERGY, INC.
DRILLING PLAN

MIS AMIGOS #1

SHL: 330 FSL & 1980 FEL

Unit "O" Section 31, T. 23S., R. 33 E.

BHL: 330 FNL & 1980 FEL

Unit "B" Section 31, T. 23 S., R. 33 E.

Lea County, NM

1. The elevation of the unprepared ground is 3654' feet above sea level.
2. The geologic name of the surface formation is Quaternary - Alluvium.
3. A rotary rig will be utilized to drill the well to 11,090' TVD/15404'MD and run casing. This equipment will then be rigged down and the well will be completed with a workover rig.
4. Proposed total depth is MD: 15404' TVD: 11,090'.
5. Estimated tops of important geologic markers:

Quaternary – Alluvium	Surface*
Rustler	1206'
Castile/Delaware Top	5009'
Cherry Canyon Sand	6020'
Brushy Canyon Sand	7640'
Bone Spring	8962'
1st Bone Spring Ss	10090'
2 nd Bone Spring Lm	10324'
2 nd Bone Spring Ss	10791'
Target Interval	11050'
TVD	11090' (150 degree F)

*Water possible above Rustler

6. Estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered:

Cherry Canyon	Oil (2,640 psi)
Brushy Canyon	Oil (3,357 psi)
Bone Spring	Oil (3,933 psi)

7. CASING PROGRAM:

Hole Size	Depth	OD Csg.	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' – 1250'	13-3/8"	48#	STC	H-40	New	2.69	1.15	3.94
12-1/4"	0' – 5050'	9-5/8"	40#	LTC	HCL-80	New	1.90	1.40	2.99
8-3/4"	0' – 11500'	7"	26#	LTC	HCP-110	New	1.67	1.31	1.72
6-1/8"	11500' – 15404'	4-1/2"	11.6#	LTC	P-110	New	1.79	1.27	N/A

8. CEMENT PROGRAM: (Note yields and DV tool depths if multiple stages)

i. Surface Cement:

Lead Slurry: Lead with 830 sks ExtendaCem - CZ (13.7 ppg, 1.68 cu ft/sk, 8.72 gal wtr/sk)

Tail Slurry: Tail-in with 285 sks HalCem – C, 2 % Calcium Chloride - Flake (Accelerator)
(14.8 ppg, 1.35 cu ft/sk, 6.39 gal wtr/sk)

100% excess. Cement to surface.

ii. Intermediate Cement:

Lead Slurry: Lead with 1385 sks, EconoCem – HLC, 5 % Salt (Salt), 5 lbm/sk Kol-Seal (Lost Circulation Additive) (12.9 ppg, 1.88 ft³/sk, 9.61 gal wtr/sk)

Tail Slurry: Tail-in with 250 sks, HalCem – C (14.8 ppg, 1.33 cu ft/sk, 6.34 gal wtr/sk)

50% excess. Cement to surface.

iii. Production Cement:

1st stage: Lead Slurry: Fluid 2: Lead with 395 sks, CorrosaCem – H, 0.4 % CFR-3 (Dispersant), 5 lbm/sk, Kol-Seal (Lost Circulation Additive), 0.25 lbm/sk D-AIR 5000 (Defoamer), 0.1 % H R-800 (Retarder) (14.4 ppg, 1.23 ft³/sk, 5.09 gal wtr/sk)

Tail Slurry: Fluid 3: Tail-in with 265 sks, HalCem – H, 0.5 % LAP-1 (Low Fluid Loss Control), 0.25 % CFR-3 (Dispersant), 5 lbm/sk Kol-Seal (Lost Circulation Additive), 0.25 lbm/sk D-AIR 5000 (Defoamer), 0.1 % HR-800 (Retarder) (15.8 ppg, 1.18 ft³/sk, 4.8 gal/sx wtr)

1st DV tool - 9000'.

2nd Stage: Lead Slurry: 100 sks EconoCem – H, 0.1 % HR-601 (Retarder) (11.90 ppg, yield: 2.44 ft³/sk, 13.98 Gal/sk wtr)

Tail Slurry: Tail-in with 420 sks VersaCem - PBSH2 0.5 % Halad®-344 (Low Fluid Loss

Control), 0.4 %, CFR-3 (Dispersant), 5 lbm/sk Kol-Seal (Lost Circulation Additive), 0.25 lbm/sk D-AIR 5000 (Defoamer), 0.1 % HR-800 (Retarder) (13.2 ppg, 1.62 ft³/sk, 8.02 gal/sx wtr)
2nd DV Tool 6000 ft.

3rd stage: Lead Slurry: Lead with 100 sks EconoCem – H (11.9 ppg, 2.43 ft³/sk, 13.96 gal/sx wtr)

Tail Slurry: Tail-in with 195 sks VersaCem - PBSH2, 0.5 % Halad®-344 (Low Fluid Loss Control), 0.4% CFR-3 (Dispersant, 5lbm/sk Kol-Seal (Lost Circulation Additive), 0.25 lbm/sk D-AIR 5000 (Defoamer) (13.2 ppg, 1.62 ft³/sk, 8.02 gal/sx wtr)
TOC 4500
50% excess, all volumes to be adjusted per caliper log.

iv. Liner Cement:

Halliburton swell packers will be installed on the 4-1/2" casing

9. PRESSURE CONTROL EQUIPMENT:

The blow out preventer equipment (BOP) diagram is attached to this Drilling Plan. The blowout preventer stack for the intermediate and production hole will consist of a double ram blowout preventer and annular preventer rated to 5000 psi working pressure. All BOP's and accessory equipment will be tested according to Onshore Order #2 before drilling out. A hydraulic closing unit will be a part of this equipment and will be function tested daily.

10. PROPOSED MUD CIRCULATION SYSTEM:

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' to 1250'	13-3/8"	FW/Native	8.5 – 8.8	35-40	NC
1250' to 5050'	12-1/4"	Brine/ Gel Sweeps	9.8 – 10.2	30-32	NC
5075' to 11500'	8-3/4"	FW/Polymer Sweeps	8.6-8.8	29-32	NC-20
11500-15404'	6-1/8"	FW/Polymer Sweeps	8.6-8.8	29-32	NC-20

The necessary mud products for weight addition and fluid loss control will be on location at all times.

Spud with fresh water/native mud. Drill out from under 13-3/8" surface casing with brine solution. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system.

11. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

- i. A kelly cock will be in the drill string at all times.

- ii. A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.
- iii. Hydrogen sulfide detection equipment and breathing equipment will be in operation from drilling out the 9-5/8" casing shoe until the 7" casing is cemented.

12. LOGGING, CORING AND TESTING PROGRAM:

- A. Potential drill stem tests will be based on geological sample shows.
- B. No coring is anticipated.
- C. Mudlogger unit will be on and working from 5050' to TD.
- D. Open hole logging to include Density/Neutron/PE/Dual Laterlog/Spectral Gamma from TD to intermediate casing, with Neutron/Gamma continuing to surface.

13. ABNORMAL PRESSURES AND TEMPERATURES / POTENTIAL HAZARDS:

No abnormal pressures are anticipated. Max bottom hole pressure should not exceed 4880 psi. BHT of 150° F is anticipated. No H₂S is expected but monitors will be in place to detect any H₂S occurrences. An H₂S contingency plan has also been submitted with this application. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid. Should any abnormal or hazardous circumstances be encountered personnel on location will take necessary steps to ensure safety of all personnel and environment.

14. SPECIAL INSTRUCTIONS:

- A. Reports will be filled out on the XTO Drilling Report form, and the Casing/Cementing Detail Forms provided.
- B. Deviation:
 - Surface Hole: Maximum of 1° and not more than 1° change per 100'.
 - Production Hole: Maximum of 4° and not more than 1.5° change per 100'.
 - Note: Maximum distance between surveys is 500'.**
- C. WOC a minimum of 18 hours or before cement gains compressive strength of 500 psi, whichever is greater, before drilling out shoe joint on surface casing string. Use minimal WOB and RPM until drill collars are below the shoe joints.
- D. Check BOP blind rams each trip and pipe rams each day. Strap out of hole for logging and/or casing jobs.
- E. A trash trailer will be provided on each location. Keep trash picked up and the location as clean as possible. All drilling line, oil filters, etc. should be hauled away at the Drilling Contractor's expense. At the conclusion of drilling operations, the contents of the trash trailer will be disposed of into a commercial sanitary landfill.



XTO Energy Co

**Lea County
Mis Amigos
#1H
OH**

Plan: Plan #1

Pathfinder X & Y Report

16 May, 2012

PATHFINDER®

A Schlumberger Company

MAY 29 2012

MAY 29 2012



Pathfinder
Pathfinder X & Y Report

PATHFINDER
A Schlumberger Company

Company:	XTO Energy Co	Local Co-ordinate Reference:	Well #1H
Project:	Lea County	TVD Reference:	KB = 19' @ 3673.0usft (Pioneer 33)
Site:	Mis Amigos	MD Reference:	KB = 19' @ 3673.0usft (Pioneer 33)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Project	Lea County		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site		Mis Amigos									
Site Position:		Northing:		457,151.000 usft		Latitude:		32.255			
From:		Map		Easting:		723,978.400 usft		Longitude:		-103.609	
Position Uncertainty:		0.0 usft		Slot Radius:		13-3/16 "		Grid Convergence:		0.39 °	

Well		#1H				
Well Position	+N/-S	0.0 usft	Northing:	457,151.000 usft	Latitude:	32.255
	+E/-W	0.0 usft	Easting:	723,978.400 usft	Longitude:	-103.609
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	3,654.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	5/15/2012	7.48	60.21	48,577

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	359.61

Survey Tool Program		Date 5/15/2012		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	15,404.5	Plan #1 (OH)		



Pathfinder Pathfinder X & Y Report



Company:	XTO Energy Co	Local Co-ordinate Reference:	Well #1H
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Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
0.0	0.00	0.00	0.0	-3,673.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
100.0	0.00	0.00	100.0	-3,573.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
200.0	0.00	0.00	200.0	-3,473.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
300.0	0.00	0.00	300.0	-3,373.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
400.0	0.00	0.00	400.0	-3,273.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
500.0	0.00	0.00	500.0	-3,173.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
600.0	0.00	0.00	600.0	-3,073.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
700.0	0.00	0.00	700.0	-2,973.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
800.0	0.00	0.00	800.0	-2,873.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
900.0	0.00	0.00	900.0	-2,773.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
1,000.0	0.00	0.00	1,000.0	-2,673.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
1,100.0	0.00	0.00	1,100.0	-2,573.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
1,200.0	0.00	0.00	1,200.0	-2,473.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
1,300.0	0.00	0.00	1,300.0	-2,373.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
1,400.0	0.00	0.00	1,400.0	-2,273.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
1,500.0	0.00	0.00	1,500.0	-2,173.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
1,600.0	0.00	0.00	1,600.0	-2,073.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
1,700.0	0.00	0.00	1,700.0	-1,973.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
1,800.0	0.00	0.00	1,800.0	-1,873.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
1,900.0	0.00	0.00	1,900.0	-1,773.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
2,000.0	0.00	0.00	2,000.0	-1,673.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
2,100.0	0.00	0.00	2,100.0	-1,573.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
2,200.0	0.00	0.00	2,200.0	-1,473.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
2,300.0	0.00	0.00	2,300.0	-1,373.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
2,400.0	0.00	0.00	2,400.0	-1,273.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
2,500.0	0.00	0.00	2,500.0	-1,173.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
2,600.0	0.00	0.00	2,600.0	-1,073.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	



Pathfinder
Pathfinder X & Y Report

PATHFINDER
A Schlumberger Company

Company:	XTO Energy Co	Local Co-ordinate Reference:	Well #1H
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Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg: (°/100usft)	Northing (usft)	Easting (usft)	
2,700.0	0.00	0.00	2,700.0	-973.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
2,800.0	0.00	0.00	2,800.0	-873.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
2,900.0	0.00	0.00	2,900.0	-773.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
3,000.0	0.00	0.00	3,000.0	-673.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
3,100.0	0.00	0.00	3,100.0	-573.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
3,200.0	0.00	0.00	3,200.0	-473.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
3,300.0	0.00	0.00	3,300.0	-373.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
3,400.0	0.00	0.00	3,400.0	-273.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
3,500.0	0.00	0.00	3,500.0	-173.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
3,600.0	0.00	0.00	3,600.0	-73.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
3,700.0	0.00	0.00	3,700.0	27.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
3,800.0	0.00	0.00	3,800.0	127.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
3,900.0	0.00	0.00	3,900.0	227.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
4,000.0	0.00	0.00	4,000.0	327.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
4,100.0	0.00	0.00	4,100.0	427.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
4,200.0	0.00	0.00	4,200.0	527.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
4,300.0	0.00	0.00	4,300.0	627.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
4,400.0	0.00	0.00	4,400.0	727.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
4,500.0	0.00	0.00	4,500.0	827.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
4,600.0	0.00	0.00	4,600.0	927.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
4,700.0	0.00	0.00	4,700.0	1,027.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
4,800.0	0.00	0.00	4,800.0	1,127.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
4,900.0	0.00	0.00	4,900.0	1,227.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
5,000.0	0.00	0.00	5,000.0	1,327.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
5,100.0	0.00	0.00	5,100.0	1,427.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
5,200.0	0.00	0.00	5,200.0	1,527.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
5,300.0	0.00	0.00	5,300.0	1,627.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	



Pathfinder
Pathfinder X & Y Report

PATHFINDER
A Schlumberger Company

Company:	XTO Energy Co	Local Co-ordinate Reference:	Well #1H
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Site:	Mis Amigos	MD Reference:	KB = 19' @ 3673.0usft (Pioneer 33)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
5,400.0	0.00	0.00	5,400.0	1,727.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
5,500.0	0.00	0.00	5,500.0	1,827.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
5,600.0	0.00	0.00	5,600.0	1,927.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
5,700.0	0.00	0.00	5,700.0	2,027.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
5,800.0	0.00	0.00	5,800.0	2,127.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
5,900.0	0.00	0.00	5,900.0	2,227.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
6,000.0	0.00	0.00	6,000.0	2,327.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
6,100.0	0.00	0.00	6,100.0	2,427.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
6,200.0	0.00	0.00	6,200.0	2,527.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
6,300.0	0.00	0.00	6,300.0	2,627.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
6,400.0	0.00	0.00	6,400.0	2,727.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
6,500.0	0.00	0.00	6,500.0	2,827.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
6,600.0	0.00	0.00	6,600.0	2,927.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
6,700.0	0.00	0.00	6,700.0	3,027.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
6,800.0	0.00	0.00	6,800.0	3,127.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
6,900.0	0.00	0.00	6,900.0	3,227.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
7,000.0	0.00	0.00	7,000.0	3,327.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
7,100.0	0.00	0.00	7,100.0	3,427.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
7,200.0	0.00	0.00	7,200.0	3,527.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
7,300.0	0.00	0.00	7,300.0	3,627.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
7,400.0	0.00	0.00	7,400.0	3,727.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
7,500.0	0.00	0.00	7,500.0	3,827.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
7,600.0	0.00	0.00	7,600.0	3,927.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
7,700.0	0.00	0.00	7,700.0	4,027.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
7,800.0	0.00	0.00	7,800.0	4,127.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
7,900.0	0.00	0.00	7,900.0	4,227.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
8,000.0	0.00	0.00	8,000.0	4,327.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	



Pathfinder
Pathfinder X & Y Report

PATHFINDER
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Company:	XTO Energy Co	Local Co-ordinate Reference:	Well #1H
Project:	Lea County	TVD Reference:	KB = 19' @ 3673.0usft (Pioneer 33)
Site:	Mis Amigos	MD Reference:	KB = 19' @ 3673.0usft (Pioneer 33)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V: Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
8,100.0	0.00	0.00	8,100.0	4,427.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
8,200.0	0.00	0.00	8,200.0	4,527.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
8,300.0	0.00	0.00	8,300.0	4,627.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
8,400.0	0.00	0.00	8,400.0	4,727.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
8,500.0	0.00	0.00	8,500.0	4,827.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
8,600.0	0.00	0.00	8,600.0	4,927.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
8,700.0	0.00	0.00	8,700.0	5,027.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
8,800.0	0.00	0.00	8,800.0	5,127.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
8,900.0	0.00	0.00	8,900.0	5,227.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
9,000.0	0.00	0.00	9,000.0	5,327.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
9,100.0	0.00	0.00	9,100.0	5,427.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
9,200.0	0.00	0.00	9,200.0	5,527.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
9,300.0	0.00	0.00	9,300.0	5,627.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
9,400.0	0.00	0.00	9,400.0	5,727.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
9,500.0	0.00	0.00	9,500.0	5,827.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
9,600.0	0.00	0.00	9,600.0	5,927.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
9,700.0	0.00	0.00	9,700.0	6,027.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
9,800.0	0.00	0.00	9,800.0	6,127.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
9,900.0	0.00	0.00	9,900.0	6,227.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
10,000.0	0.00	0.00	10,000.0	6,327.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
10,090.0	0.00	0.00	10,090.0	6,417.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
1st Bone Spring											
10,100.0	0.00	0.00	10,100.0	6,427.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
10,200.0	0.00	0.00	10,200.0	6,527.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
10,300.0	0.00	0.00	10,300.0	6,627.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
10,324.0	0.00	0.00	10,324.0	6,651.0	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
2nd Bone Spring Lm											



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Company:	XTO Energy Co	Local Co-ordinate Reference:	Well #1H:
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Site:	Mis Amigos	MD Reference:	KB = 19' @ 3673.0usft (Pioneer 33)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
10,373.8	0.00	0.00	10,373.8	6,700.8	0.0	0.0	0.0	0.00	457,151.00	723,978.40	
10,400.0	2.10	359.61	10,400.0	6,727.0	0.5	0.0	0.5	8.00	457,151.48	723,978.40	
10,450.0	6.10	359.61	10,449.9	6,776.9	4.0	0.0	4.0	8.00	457,155.05	723,978.37	
10,500.0	10.10	359.61	10,499.3	6,826.3	11.1	-0.1	11.1	8.00	457,162.09	723,978.33	
10,550.0	14.10	359.61	10,548.2	6,875.2	21.6	-0.1	21.6	8.00	457,172.56	723,978.25	
10,600.0	18.10	359.61	10,596.3	6,923.3	35.4	-0.2	35.4	8.00	457,186.42	723,978.16	
10,650.0	22.10	359.61	10,643.2	6,970.2	52.6	-0.4	52.6	8.00	457,203.60	723,978.05	
10,700.0	26.10	359.61	10,688.8	7,015.8	73.0	-0.5	73.0	8.00	457,224.01	723,977.91	
10,750.0	30.10	359.61	10,732.9	7,059.9	96.6	-0.6	96.6	8.00	457,247.55	723,977.75	
10,800.0	34.10	359.61	10,775.3	7,102.3	123.1	-0.8	123.1	8.00	457,274.11	723,977.57	
10,819.2	35.63	359.61	10,791.0	7,118.0	134.1	-0.9	134.1	8.00	457,285.06	723,977.50	
2nd Bone Spring Ss											
10,850.0	38.10	359.61	10,815.7	7,142.7	152.6	-1.0	152.6	8.00	457,303.56	723,977.37	
10,900.0	42.10	359.61	10,853.9	7,180.9	184.8	-1.2	184.8	8.00	457,335.76	723,977.16	
10,950.0	46.10	359.61	10,889.8	7,216.8	219.5	-1.5	219.5	8.00	457,370.54	723,976.92	
11,000.0	50.10	359.61	10,923.2	7,250.2	256.7	-1.7	256.8	8.00	457,407.75	723,976.67	
11,050.0	54.10	359.61	10,953.9	7,280.9	296.2	-2.0	296.2	8.00	457,447.19	723,976.41	
11,100.0	58.10	359.61	10,981.8	7,308.8	337.7	-2.3	337.7	8.00	457,488.68	723,976.13	
11,150.0	62.10	359.61	11,006.7	7,333.7	381.0	-2.6	381.0	8.00	457,532.01	723,975.84	
11,200.0	66.10	359.61	11,028.6	7,355.6	426.0	-2.9	426.0	8.00	457,576.98	723,975.53	
11,250.0	70.10	359.61	11,047.2	7,374.2	472.4	-3.2	472.4	8.00	457,623.36	723,975.22	
11,300.0	74.10	359.61	11,062.6	7,389.6	519.9	-3.5	519.9	8.00	457,670.93	723,974.90	
11,350.0	78.10	359.61	11,074.6	7,401.6	568.5	-3.8	568.5	8.00	457,719.45	723,974.57	
11,400.0	82.10	359.61	11,083.2	7,410.2	617.7	-4.2	617.7	8.00	457,768.70	723,974.24	
11,450.0	86.10	359.61	11,088.3	7,415.3	667.4	-4.5	667.4	8.00	457,818.42	723,973.91	
11,498.8	90.00	359.61	11,090.0	7,417.0	716.2	-4.8	716.2	8.00	457,867.18	723,973.58	
11,500.0	90.00	359.61	11,090.0	7,417.0	717.4	-4.8	717.4	0.00	457,868.38	723,973.57	



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Company:	XTO Energy Co	Local Co-ordinate Reference:	Well #1H
Project:	Lea County	TVD Reference:	KB = 19' @ 3673.0usft (Pioneer 33)
Site:	Mis Amigos	MD Reference:	KB = 19' @ 3673.0usft (Pioneer 33)
Well:	#1H	North Reference:	Grd
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
11,600.0	90.00	359.61	11,090.0	7,417.0	817.4	-5.5	817.4	0.00	457,968.38	723,972.90	
11,700.0	90.00	359.61	11,090.0	7,417.0	917.4	-6.2	917.4	0.00	458,068.38	723,972.23	
11,800.0	90.00	359.61	11,090.0	7,417.0	1,017.4	-6.8	1,017.4	0.00	458,168.37	723,971.55	
11,900.0	90.00	359.61	11,090.0	7,417.0	1,117.4	-7.5	1,117.4	0.00	458,268.37	723,970.88	
12,000.0	90.00	359.61	11,090.0	7,417.0	1,217.4	-8.2	1,217.4	0.00	458,368.37	723,970.21	
12,100.0	90.00	359.61	11,090.0	7,417.0	1,317.4	-8.9	1,317.4	0.00	458,468.37	723,969.54	
12,200.0	90.00	359.61	11,090.0	7,417.0	1,417.4	-9.5	1,417.4	0.00	458,568.37	723,968.86	
12,300.0	90.00	359.61	11,090.0	7,417.0	1,517.4	-10.2	1,517.4	0.00	458,668.36	723,968.19	
12,400.0	90.00	359.61	11,090.0	7,417.0	1,617.4	-10.9	1,617.4	0.00	458,768.36	723,967.52	
12,500.0	90.00	359.61	11,090.0	7,417.0	1,717.4	-11.6	1,717.4	0.00	458,868.36	723,966.84	
12,600.0	90.00	359.61	11,090.0	7,417.0	1,817.4	-12.2	1,817.4	0.00	458,968.36	723,966.17	
12,700.0	90.00	359.61	11,090.0	7,417.0	1,917.4	-12.9	1,917.4	0.00	459,068.35	723,965.50	
12,800.0	90.00	359.61	11,090.0	7,417.0	2,017.4	-13.6	2,017.4	0.00	459,168.35	723,964.83	
12,900.0	90.00	359.61	11,090.0	7,417.0	2,117.3	-14.2	2,117.4	0.00	459,268.35	723,964.15	
13,000.0	90.00	359.61	11,090.0	7,417.0	2,217.3	-14.9	2,217.4	0.00	459,368.35	723,963.48	
13,100.0	90.00	359.61	11,090.0	7,417.0	2,317.3	-15.6	2,317.4	0.00	459,468.34	723,962.81	
13,200.0	90.00	359.61	11,090.0	7,417.0	2,417.3	-16.3	2,417.4	0.00	459,568.34	723,962.13	
13,300.0	90.00	359.61	11,090.0	7,417.0	2,517.3	-16.9	2,517.4	0.00	459,668.34	723,961.46	
13,400.0	90.00	359.61	11,090.0	7,417.0	2,617.3	-17.6	2,617.4	0.00	459,768.34	723,960.79	
13,500.0	90.00	359.61	11,090.0	7,417.0	2,717.3	-18.3	2,717.4	0.00	459,868.34	723,960.12	
13,600.0	90.00	359.61	11,090.0	7,417.0	2,817.3	-19.0	2,817.4	0.00	459,968.33	723,959.44	
13,700.0	90.00	359.61	11,090.0	7,417.0	2,917.3	-19.6	2,917.4	0.00	460,068.33	723,958.77	
13,800.0	90.00	359.61	11,090.0	7,417.0	3,017.3	-20.3	3,017.4	0.00	460,168.33	723,958.10	
13,900.0	90.00	359.61	11,090.0	7,417.0	3,117.3	-21.0	3,117.4	0.00	460,268.33	723,957.42	
14,000.0	90.00	359.61	11,090.0	7,417.0	3,217.3	-21.6	3,217.4	0.00	460,368.32	723,956.75	
14,100.0	90.00	359.61	11,090.0	7,417.0	3,317.3	-22.3	3,317.4	0.00	460,468.32	723,956.08	
14,200.0	90.00	359.61	11,090.0	7,417.0	3,417.3	-23.0	3,417.4	0.00	460,568.32	723,955.40	



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Project:	Lea County	TVD Reference:	KB = 19' @ 3673.0usft (Pioneer 33)
Site:	Mis Amigos	MD Reference:	KB = 19' @ 3673.0usft (Pioneer 33)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
14,300.0	90.00	359.61	11,090.0	7,417.0	3,517.3	-23.7	3,517.4	0.00	460,668.32	723,954.73	
14,400.0	90.00	359.61	11,090.0	7,417.0	3,617.3	-24.3	3,617.4	0.00	460,768.32	723,954.06	
14,500.0	90.00	359.61	11,090.0	7,417.0	3,717.3	-25.0	3,717.4	0.00	460,868.31	723,953.39	
14,600.0	90.00	359.61	11,090.0	7,417.0	3,817.3	-25.7	3,817.4	0.00	460,968.31	723,952.71	
14,700.0	90.00	359.61	11,090.0	7,417.0	3,917.3	-26.4	3,917.4	0.00	461,068.31	723,952.04	
14,800.0	90.00	359.61	11,090.0	7,417.0	4,017.3	-27.0	4,017.4	0.00	461,168.31	723,951.37	
14,900.0	90.00	359.61	11,090.0	7,417.0	4,117.3	-27.7	4,117.4	0.00	461,268.30	723,950.69	
15,000.0	90.00	359.61	11,090.0	7,417.0	4,217.3	-28.4	4,217.4	0.00	461,368.30	723,950.02	
15,100.0	90.00	359.61	11,090.0	7,417.0	4,317.3	-29.1	4,317.4	0.00	461,468.30	723,949.35	
15,200.0	90.00	359.61	11,090.0	7,417.0	4,417.3	-29.7	4,417.4	0.00	461,568.30	723,948.68	
15,300.0	90.00	359.61	11,090.0	7,417.0	4,517.3	-30.4	4,517.4	0.00	461,668.29	723,948.00	
15,404.5	90.00	359.61	11,090.0	7,417.0	4,621.8	-31.1	4,621.9	0.00	461,772.80	723,947.30	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
10,819.2	10,791.0	2nd Bone Spring Ss		0.00		
10,324.0	10,324.0	2nd Bone Spring Lm		0.00		
10,090.0	10,090.0	1st Bone Spring		0.00		

Checked By: _____	Approved By: _____	Date: _____
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EUNICE OFFICE – EDDY & LEA COUNTIES

EMSU @ Oil Center, NM, 8/10ths mile west of Hwy 8 on Hwy 175
Eunice, NM 575-394-2089

Buckeye Office @ Lea County: From Hobbs, NM take Hwy 62/180 West
Approx. 10 miles to SH 529, turn NW on SH 529 for 3 miles, turn North
On Hwy 238, proceed North approx 8 miles to Buckeye field office
(1/4 mile North of Buckeye store) 575-396-0542

XTO ENERGY INC PERSONNEL:

Boogie Armes, Sr. Drilling Superintendent	432-556-7403
Bob Chance, Drilling Superintendent	432-296-3926
Chip Amrock, Sr. Drilling Engineer	432-638-8372
Jeff Raines, Construction Foreman	432-557-3159
Dudley McMinn, EH & S Manager	432-557-7976
Rick Wilson, Production Foreman	575-441-1147
Jerry Parker, Buckeye Production Foreman	575-441-1628
David Paschal, Eunice Monument Production Foreman	575-390-7167
Gene Hudson, Maintenance Foreman	575-441-1634
Guy Haykus, Production Superintendent	575-634-5677

SHERIFF DEPARTMENTS:

Eddy County	575-887-7551
Lea County	575-396-3611

NEW MEXICO STATE POLICE: 575-392-5588

FIRE DEPARTMENTS:

	911
Carlsbad	575-885-2111
Eunice	575-394-2111
Hobbs	575-397-9308
Jal	575-395-2221
Lovington	575-396-2359

HOSPITALS:

	911
Carlsbad Medical Emergency	575-885-2111
Eunice Medical Emergency	575-394-2112
Hobbs Medical Emergency	575-397-9308
Jal Medical Emergency	575-395-2221
Lovington Medical Emergency	575-396-2359

AGENT NOTIFICATIONS:

Bureau of Land Management	575-393-3612
New Mexico Oil Conservation Division	575-393-6161
Mosaic Potash - Carlsbad	575-887-2871

CONTRACTORS:

ABC Rental – Light Towers	575-394-3155
Bulldog Services – Trucking/Forklift	575-391-8543
Champion – Chemical	575-393-7726
Indian Fire & Safety	575-393-3093
Key – Dirt Contractor	575-393-3180
Key Tools – Light Towers	575-393-2415
Sweatt – Dirt Contractor	575-397-4541
RWI – Contract Gang	575-393-5305